(8)

No. 95-728

IN THE

Supreme Court of the United States

OCTOBER TERM, 1995

WARNER-JENKINSON COMPANY, INC.,
Petitioner,

v.

HILTON DAVIS CHEMICAL CO.,
Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

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BRIEF FOR PETITIONER

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QUESTION PRESENTED

Whether patent infringement exists whenever the accused product or process is "equivalent" to the invention claimed in the patent, in that the differences are not "substantial" as determined by a jury, even though the accused product or process is outside the literal scope of the patent claim.

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BRIEF FOR PETITIONER

The Federal Circuit held in this case that a patentee always may resort to two different causes of action for infringement—one based on the patent claim's literal coverage of the accused product or process; the other based on the lack of "substantial differences" between the patent claim and the accused product or process (as found by a jury in a damages case). Petitioner Warner-Jenkinson challenges this standard for infringement.[1]

OPINIONS BELOW

The opinions of the court of appeals sitting *en banc* (Pet. App. 1a-152a) are reported at 62 F.3d 1512. The panel opinion on other issues (Pet. App. 153a-59a) is not reported. The district court's opinion on post-judgment motions (Pet. App. 160a-67a) is not reported.

JURISDICTION

The court of appeals entered judgment on August 8, 1995. Pet. App. 1a, 153a . The petition for a writ of certiorari was filed on November 6, 1995, and granted on February 26, 1996 (J.A. 154). This Court has jurisdiction under 28 U.S.C. § 1254.

STATUTORY PROVISIONS INVOLVED

Pertinent provisions of Title 35, U.S. Code, are set out in an appendix to this brief.

STATEMENT

A. Background

This case arises out of separate, independent efforts by petitioner Warner-Jenkinson and respondent Hilton Davis to develop an improved process, known as ultrafiltration, for removing impurities from certain dyes. Both Warner-Jenkinson and Hilton Davis manufacture food dyes, in-

[1] Warner-Jenkinson is a wholly owned subsidiary of Universal Foods Corporation and has no subsidiaries other than wholly owned ones. *See* Sup. Ct. R. 29.6.

cluding Red Dye #40 and Yellow Dye #6. "Historically, [both parties] used an expensive and wasteful process known as 'salting out' to purify the dyes." Pet. App. 2a. Ultrafiltration—which "uses osmosis to separate components of a solution by drawing some of the components, but not others, through a membrane" (Pet. App. 2a-3a)—produces a dye of high purity at less cost and with less loss of the dye itself. The use of ultrafiltration to purify dyes was known at least as early as 1976, when two individuals unrelated to the parties here applied for what became the "Booth patent," No. 4,189,380, issued in 1980. *See* C.A. Jt. App. 2210.

Warner-Jenkinson and Hilton Davis developed their respective ultrafiltration processes on independent, parallel tracks. Both of these tracks involved dealings with a company called Osmonics, Inc., which by the early 1980s already was "known to specialize in the development of membranes and equipment for fluid purification by ultrafiltration." Pet. App. 85a (Nies, J., dissenting). Having been separately approached by the companies, Osmonics selected certain membranes for testing and specified the process conditions for the tests—*i.e.*, acidity of the solution (pH), pressure, and membrane pore size—first for Warner-Jenkinson and later for Hilton Davis. In March 1983, after Osmonics completed tests for both companies, Hilton Davis (unbeknownst to either Osmonics or Warner-Jenkinson) applied for a patent for the process. J.A. 73.

Hilton Davis's initial efforts to obtain a patent met with rejection at the U.S. Patent and Trademark Office (PTO). J.A. 78-82. The application followed the requirements of Section 112 of the 1952 Patent Act, 35 U.S.C. § 112, which directs that the "specification" portion of the application contain a detailed description of the invention, designed to "enable" other skilled persons to make it (Section 112 (paragraph 1)), and then conclude "with one or more *claims* particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention" (Section 112 (paragraph 2) (emphasis added)). In the "claims" portion of its original application, Hilton Davis stated its principal claim for its

invention without specifying a pH level for the solution used in the filtering process. *See* J.A. 76-77.[2] In October 1984, Hilton Davis was told by the PTO Examiner that the process it claimed was obvious given the ultrafiltration process of the 1980 Booth patent, and hence not patentable, 35 U.S.C. § 103. J.A. 81.[3]

Hilton Davis abandoned the initial application (*see* J.A. 73, 84-85, 88) and, in November 1984, filed a second application—a "continuation in part" ("CIP"). J.A. 86. That application, as filed, likewise included no pH limit in the principal claim. J.A. 90.[4] In February 1985, the PTO Examiner rejected this application too, as obvious in light of the Booth patent. J.A. 91-95.

Hilton Davis met, through its patent agent, with the PTO Examiner on May 9, 1985. *See* J.A. 106. The Examiner Interview Summary Record prepared by the Examiner (J.A. 96-98) states that Hilton Davis "pointed

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[2] Other claims in the patent application, along with the specification describing the process, referred to pH levels of 7.0 to 8.0. J.A. 76, 77.

The measurement of pH (potential of hydrogen) is on a logarithmic scale: the numbers represent exponents. A pH of 5, for example, reflects a hydrogen ion concentration of $1/10^5$ (.00001), whereas a pH of 6 reflects one tenth the hydrogen ion concentration—$1/10^6$ (.000001). Thus, a single pH unit represents a tenfold difference in hydrogen ion concentration. *See* J.A. 123-24. The lower the pH below 7 (which is "neutral"), the more acidic the solution.

For clarity, we focus throughout this brief on the pH condition of the patent claims, as the starkest example of the difference between Warner-Jenkinson's process and Hilton Davis's patent claims. Other differences, such as the pressure conditions, exist as well. *See* Pet. App. 4a, 23a.

[3] The Booth patent disclosed an ultrafiltration process that "operates at a pH above 9 and preferably between 11 and 13." Pet. App. 4a; *id.* at 156a.

[4] The language printed in italics in Claim 1 of this application (J.A. 90) was not part of this application but was added by hand in the PTO, after its rejection, to reflect Hilton Davis's subsequent amendments. Other claims in this second patent application, along with the specification describing the process, referred to pH levels of 5.0 to 8.0. J.A. 90.

out the 4 major differences between the claimed process and that of the Booth Patent. The examiner stated that if claim 1 were amended to contain the pH range of 6 to 9, the rejection on prior art would be overcome." J.A. 97. Hilton Davis, in its Record of Interview (J.A. 106-08), likewise noted that it had "pointed out four major points of difference" between its process and the Booth process, including: "the very high pH ranges deliberately sought in the Booth process, i.e., above 9.0 and preferably 11 to 13 . . . , in contrast to the relatively low pH's used in the present process (i.e. from around 6 to around 9)." J.A. 107. Hilton Davis reported that the Examiner stated that he would reconsider the rejection "on presentation of such arguments, coupled with an amendment in Claim 1 inserting the pH range from 6 to 9." J.A. 107.

Hilton Davis submitted a Responsive Amendment on May 14, 1985. J.A. 99-105. The changes included amending its claim to call for "a pH from approximately 6.0 to 9.0." J.A. 99. Hilton Davis contended in the amending document that its process differed from the Booth process in several ways, including that the Booth process must "maintain the pH *above* 9" whereas its process operates "at much lower pH's, i.e. approximately 9 but preferably 6.0 to 8.0." J.A. 102.[5] It added: "Nevertheless, in order to further highlight the process parameters of the instant process, and in accordance with the understanding reached at the interview, the pH range of 6.0 to 9.0 has been inserted in Claim 1 . . . ." J.A. 103. Hilton Davis explained that "the patentability of the instant process is submitted to rest on the novelty and the unobviousness of the *process conditions*." J.A. 103-04.

As a result of the amendment, the application was approved in June 1985. J.A. 109-10. The patent—U.S. Patent No. 4,560,746 (the '746 patent)—was issued

[5] Dr. Wayne Cook, a co-inventor of Hilton Davis's process, "testified at trial that though the process would work to separate the dye from the impurities at pH-values as low as 2.0, a solution with a pH below 6.0 would cause 'tremendous foaming problems in the plant.'" Pet. App. 62a (Plager, J., dissenting) (quoting J.A. 111).

in December 1985. J.A. 8-38. Claim 1 of the patent—the independent claim governing the infringement question here—requires an aqueous solution "at a pH from approximately 6.0 to 9.0." J.A. 36-37.[6]

The process that Osmonics developed for Warner-Jenkinson does not fall within the ranges specified by Hilton Davis for its process conditions in the '746 patent. As the Federal Circuit explained, "Warner-Jenkinson did not use precisely the claimed process parameters . . . ." Pet. App. 24a. Notably, Warner-Jenkinson's process operated at a pH of 5, which is ten times more acidic than Hilton Davis's process at a pH of 6.[7] Moreover, Warner-Jenkinson developed its process entirely without knowledge of Hilton Davis's process or patent. As the Federal Circuit also explained, "Warner-Jenkinson did not learn of [Hilton Davis's] patent until October 1986, *after* it had begun commercial use of its ultrafiltration process to purify Red Dye #40." Pet. App. 5a (emphasis added); *see* J.A. 150-53 (sequence of events).

Upon learning of the '746 patent in October 1986, Warner-Jenkinson immediately consulted with its long-time patent counsel, who obtained from the PTO the patent file containing the documents quoted above. J.A. 131. Based on his reading of the patent claims and of the amendments made during the application process,

[6] Other claims in the patent, all of which are dependent on Claim 1, likewise refer to pH ranges of 6.0 to 8.0. J.A. 37. The specification states: "In carrying out the present process the reaction mixture . . . generally has a pH of approximately 9.0. While these solutions can be subject successfully to ultrafiltration, it is preferred to adjust the pH to approximately 6.0 to 8.0 before passage through the ultrafiltration membrane." J.A. 22. *See also* J.A. 24 (describing pH adjustments to "6.5 to 6.7" and "6.0 to 8.0"), 28 ("9.3 to 9.5" and "8.5 to 9.0"), 29 ("8.4 to 9.0"; "6.5 to 6.7"; "6.0 to 8.0"), 34 ("9-11"; "6-7").

[7] "Hilton Davis showed that Warner-Jenkinson's process operated at . . . a pH of 5." Pet. App. 4a. Because Warner-Jenkinson's process for making its dyes employed a different chemistry, it was able to operate at a pH below 6.0 to decompose a triazene impurity without causing the foaming problems noted by Dr. Cook. *See, e.g.*, Pet. App. 86a (Nies, J., dissenting); note 5, *supra*.

particularly Hilton Davis's adoption of the limitation of pH to the range of 6.0 to 9.0, counsel advised that the patent (aside from being invalid) was not infringed by Warner-Jenkinson's process, with its pH of around 5. J.A. 125-36, 144-49. In particular, counsel stated his opinion that the process—operating, as it did, outside the ranges specified in the '746 patent—did not literally infringe the '746 patent and, in addition, could not be deemed to infringe under the "doctrine of equivalents" as set forth in *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605 (1950), and various Federal Circuit decisions. J.A. 132, 147; *see* Pet. App. 87a (Nies, J., dissenting).

B. District Court Proceedings

Hilton Davis brought this suit in 1991, alleging that Warner-Jenkinson had infringed the '746 patent. J.A. 6-7. Although it claimed at first that the process developed by Warner-Jenkinson literally infringed the patent claim, it expressly disavowed this argument before the district court—presumably because a pH of 5 is ten times more acidic than, not "approximately," a pH of 6 (the lower range of Hilton Davis's claim). C.A. Jt. App. 668 ("we are not asserting literal infringement in this case"). Hilton Davis continued to press arguments, however, that Warner-Jenkinson's process infringed under the doctrine of equivalents. That was the sole infringement issue submitted to the jury. *See* J.A. 59 ("Hilton Davis asserts that the Warner-Jenkinson process for making food dyes infringes the Hilton Davis patent under the doctrine of equivalents"; no instruction on literal infringement), 68-69.[8] The jury found that Warner-Jenkinson infringed (J.A. 68-69) but not willfully (J.A. 69). It awarded damages of $3,564,705. J.A. 69.

The district court subsequently denied a motion by Warner-Jenkinson for judgment as a matter of law. Pet.

[8] The instruction said: "You may find infringement under the doctrine of equivalents when the accused process and the claimed invention perform substantially the same function in substantially the same way to yield substantially the same result even though the processes differ in name, form or shape." J.A. 59.

App. 160a-67a, 170a-71a. Even though the '746 patent had been modified before the PTO to recite a process using "a pH of approximately 6.0 to 9.0," and even though Warner-Jenkinson's process used a pH outside that range, the court nevertheless held that the jury had sufficient evidence to conclude that the monopoly granted by the '746 patent extended, under the doctrine of equivalents, beyond the terms of its claims. Pet. App. 165a. As a result, in addition to the award of damages, it issued an injunction barring Warner-Jenkinson from employing its process with *any* pH below 9.01. Pet. App. 172a.

C. Court of Appeals Decision

The Federal Circuit, sitting *en banc*, affirmed by a vote of 7-5. Pet. App. 1a-152a. The issues of validity and infringement were initially argued to a panel of that court, but, before it rendered a decision, the court decided to rehear the issues of infringement *en banc* (J.A. 4),[9] in order "to consider the important issues raised concerning the doctrine of equivalents." Pet. App. 5a. Its efforts to resolve those issues produced five separate opinions.

The majority began by broadly stating that "[t]his case presents an opportunity to restate—not to revise—the test for infringement under the doctrine of equivalents." Pet. App. 6a. Observing that this Court had "mapped the modern contours of the doctrine of equivalents in its landmark *Graver Tank* decision" (Pet. App. 7a), the court then held that every patent holder could prove infringement simply by showing that, though the defendant's product or process was in fact different from the product or process claimed in the patent, the difference was "insubstantial." *See* Pet. App. 8a; *id.* at 9a ("this court explicitly holds that the application of the doctrine of equivalents rests on the substantiality of the differences between the claimed and accused products or processes,

[9] The issue of validity later was assigned to the same panel, which held that the '746 patent was valid. Pet. App. 153a-59a. *But see* Pet. App. 90a-102a (Nies, J., dissenting). That ruling is not presented for review in this Court.

assessed according to an objective standard"). The court continued to endorse reliance on *Graver*'s "function-way-result" formulation (Pet. App. 9a) but cautioned that "the function-way-result test may not invariably suffice to show the substantiality of the differences." Pet. App. 10a.[10]

The majority insisted, again relying on *Graver*, that "lack of substantial differences" (Pet. App. 13a) was itself always a sufficient condition for non-literal infringement; no additional requirements need be met. In particular, the court determined that, while the defendant's "copying" or "designing around" had an evidentiary bearing on the substantiality of differences, the fact that a defendant developed its product or process independently of the plaintiff's patent was not relevant. *See* Pet. App. 11a-14a. As a result, "those who make only insubstantial changes to a patented product or process are liable for infringement, regardless of their awareness of the patent and its disclosure." Pet. App. 14a.[11]

The court next held that even when a patentee had narrowed its patent claims to exclude matter in order to win approval from the PTO, the doctrine of equivalents nevertheless could reach that surrendered matter, based on a judicial evaluation of the *reason* for the narrowing. *See* Pet. App. 24a-25a. Thus, Hilton Davis had explicitly narrowed its claimed process to recite "a pH from approximately 6.0 to 9.0." The court concluded that a process utilizing a pH of 5.0 was infringing because Hilton Davis

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[10] This Court in *Graver* stated that, "when the proper circumstances for its application arise . . . a patentee may invoke [the doctrine of equivalents] to proceed against the producer of a device 'if it performs substantially the same function in substantially the same way to obtain the same result.'" 339 U.S. at 608, quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929). The jury charge in this case made "function-way-result" the sole test. *See* note 8, *supra*.

[11] Having deemed "lack of substantial differences" a necessary and sufficient condition for infringement, the court held that application of the doctrine of equivalents presented a factual question to be decided by a jury in damages cases. *See* Pet. App. 14a-18a.

had amended its claim only "to avoid the disclosure in the Booth patent of an ultrafiltration process operating at a pH higher than 9." Pet. App. 24a; *see also ibid.* ("[t]his amendment surrendered pHs above 9, but does not bar Hilton Davis from asserting equivalency to processes . . . operating sometimes at a pH below 6").

In dissent, Judge Plager, noting that the doctrine of equivalents "is regularly used by patentees to seek greater coverage for their patents than the patent statute grants" (Pet. App. 53a), argued that the majority's doctrine "is a virtually uncontrolled and unreviewable license to juries to find infringement if they so choose," even "without regard to and independent of the express limitations of the patent claims which may have brought about their allowance by the [PTO] in the first place." Pet. App. 55a. The majority relied simply on *Graver* to address the inconsistency between the doctrine of equivalents and the statutory requirement of precise PTO-approved claims to define the patent monopoly. "According to *Graver Tank*, the 'theory on which [the doctrine of equivalents] is founded is that if two devices do the same work in substantially the same way, and accomplish substantially the same result, *they are the same*, even though they differ in name, form, or shape.'" Pet. App. 26a (quoting *Graver*, 339 U.S. at 608 (internal quotes omitted) (emphasis added by Federal Circuit)).

Judge Lourie, in dissent, argued that "the substantiality of the differences [between the patented and accused processes] is still only one of the factors according to *Graver*." Pet. App. 74a. Stressing the doctrine's purpose "to defeat piracy" (Pet. App. 77a), he reasoned that the determination required consideration of other matters, *e.g.*, whether the defendant intended to misappropriate, whether the defendant independently developed its product, whether the plaintiff failed to seek "reissue" from the PTO under 35 U.S.C. § 251 to correct unduly narrow claims. Pet. App. 74a-75a. But the majority rejected any limitations on its "insubstantial differences" test. Pet. App. 29a; *see ibid.* ("Infringement is, and should remain, a strict liability offense.").

Judge Nies, in dissent, explained the basic incompatibility of the doctrine of equivalents with the 1952 Act and stressed the ability of patentees to protect themselves in the patent-drafting process and to use the statutory process for reissue to correct errors of undue narrowness. Pet. App. 102a-04a.[12] Judge Nies also emphasized that Hilton Davis should not be able to reclaim under the doctrine of equivalents what it had expressly surrendered before the PTO. Pet. App. 151a. But the majority held that the surrender was reversible based on a later judicial assessment of the "reasons" for the claim amendments before the PTO. Pet. App. 31a-32a.

A concurring opinion by Judge Newman expressed considerable doubt about the doctrine of equivalents, noting "the problems of application of the doctrine that have concerned this court" and the uncertainty created by *Graver*. Pet. App. 45a. Like Judge Lourie (Pet. App. 79a n.3) and Judge Plager (Pet. App. 56a), however, Judge Newman pointed to this Court as uniquely able to address these problems and the proper continuing force of *Graver*. Pet. App. 33a. This Court subsequently granted the petition for a writ of certiorari. J.A. 154.

SUMMARY OF ARGUMENT

The judgment of liability for non-literal infringement under the Patent Act, 35 U.S.C. §§ 271, 281, should be reversed. The Federal Circuit's broad standard cannot be squared with the statute. This Court's decision in *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605 (1950), when read with the aim of reducing incompatibilities with the statute, supports at most a very narrow rule of non-literal infringement that clearly excludes liability here. And, if the Court were to address the ultimate question whether any non-literal infringement

[12] Judge Nies noted, however, that because the statutory procedure for reissue carries time limits and specifically allows competitors to invoke "intervening rights," "[t]he patentee is much better off evading the reissue procedure which Congress had provided, and resorting to its counterpart, the doctrine of equivalents, created out of the judiciary's sense of 'fairness.'" Pet. App. 103a-04a.

is authorized by the 1952 Patent Act, the better answer is that it is not.

I. The broad standard adopted by the Federal Circuit is deeply and pervasively incompatible with core structural aspects of the Patent Act. First, it violates the long-established principle, reflected in 35 U.S.C. § 112 (paragraph 2), that the outer limits of each patent monopoly must be defined with precision in the claims set forth in the patent. The Federal Circuit's "insubstantial differences" standard, in flouting that principle, deprives the public, including other firms and inventors, of the clear notice of patent boundaries that Congress has commanded. Second, the Federal Circuit's rule of non-literal infringement would violate the primacy accorded the PTO in the 1952 Act: it offers protection, through the courts, for a patent scope not approved by the PTO; and it overrides the designated process and standards—reissue of patents, 35 U.S.C. §§ 251-252—for correcting errors of undue narrowness. These basic structural incompatibilities were nowhere authorized by Congress. To the contrary, the specific provision for one form of "equivalents" protection for combination claims under 35 U.S.C. § 112 (paragraph 6) strongly negates any general "equivalents" rule of non-literal infringement.

II. In support of its broad endorsement of a doctrine of equivalents, the court of appeals relied at every turn on the 1950 decision of this Court in *Graver*. But, even if *Graver* is controlling under the 1952 Act, it justifies nothing like the Federal Circuit's expansive standard. Rather, both in its reasoning and on its facts, the *Graver* decision is entirely consistent with a standard for non-literal infringement liability that is exceedingly narrow. First, such a standard must exclude any matter that the patentee surrendered in the application process, regardless of the reason for surrender: patentees can protect themselves against unjustified surrenders; and the public must be able to rely on the record of actual surrender without the uncertainty introduced by allowing a later judicial reevaluation of the reason. Second, any such narrowed

standard for non-literal infringement should reach at most only those few matters that were not only known to be equivalent, but were disclosed in the patent as equivalent, to the patent's valid claims. Those sharply limiting conditions are consistent with *Graver*, are amply supported in precedent, reduce the impairment of the 1952 statutory scheme, and give effect to the core statutory policies that protection is available only for advances in knowledge disclosed in the patent. And this standard readily resolves this case, because Hilton Davis, far from knowing or disclosing that its process would work equivalently with pH values of around 5, actually surrendered such coverage in securing the patent.

III. There is good reason, however, to question whether this Court should, in construing the 1952 Act, follow *Graver* at all, even in its proper, narrower reading. At bottom, we submit, there is ultimately no fair resolution of the logical incompatibility between the patent scheme Congress created and *any* standard of non-literal infringement. There is no evidence of actual congressional intent to carry forward *Graver* or to create this incompatibility. Nor does a pure policy argument justify a doctrine of equivalents: such a doctrine responds to a real concern, but there are obviously strong offsetting policy concerns; and while that policy balance might be struck in different places, there is simply no basis for the courts to conclude that Congress must have intended the policy balance to be struck in a way that contradicts the evident meaning of the statute it enacted. Thus, there is no sufficient reason in policy, including in any reliance interests, for reading the 1952 Act as silently incorporating such a standard. A clean abandonment of the "doctrine of equivalents" would restore the statute's commitment to clear, reliable boundaries for patent monopolies set by agency-approved patent claims.

ARGUMENT

I. A STANDARD OF NON-LITERAL INFRINGEMENT BASED ON MERE LACK OF "SUBSTANTIAL" DIFFERENCES IS FUNDAMENTALLY INCOMPATIBLE WITH THE 1952 PATENT ACT

The Federal Circuit held that there are two forms of patent infringement: any patentee can establish infringement *either* by showing that the defendant's product or process comes within the scope of the plaintiff's patent claims, properly construed, *or* by showing simply that, even where there is concededly no literal coverage, "the differences between the claimed and accused products or processes are insubstantial." Pet. App. 7a. The result is that the boundaries of each particular patent monopoly, extending somewhere beyond the scope set by the patent claims approved by the PTO, cannot be known in advance but are effectively determined in infringement litigation (by juries in damages suits, Pet. App. 17a). This standard of non-literal infringement is inconsistent with the fundamental choices Congress made about patent protection throughout the 1952 Patent Act.

A. An "Insubstantial Differences" Infringement Standard Is Inconsistent With the Statutorily Prescribed Role of Claims in Setting Clear Outer Limits on the Scope of Patent Monopolies

A patentee's cause of action for infringement is limited to what is found in 35 U.S.C. §§ 271 and 281. *See Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 526 n.8 (1972); *Brown v. Duchesne*, 60 U.S. (19 How.) 183, 195 (1857). Section 281 creates a cause of action for "infringement." 35 U.S.C. § 281. Section 271 defines "infringement" to mean the unauthorized using (among other actions) of "any patented invention" (35 U.S.C. § 271(a)), mirroring Section 154's declaration that a patent grants the right to "exclude others from . . . using . . . the invention." 35 U.S.C. § 154(a)(1). Infringement thus is coincident with the scope of the "invention" for which the statute grants a monopoly.

What is protected by the patent monopoly is, under the text of the statute and long-established precedent and policy, only that which is clearly defined in the patent claims. The Federal Circuit's doctrine of equivalents violates both aspects of that principle. By definition, it enlarges the protected monopoly of every patent beyond the patent claims (otherwise, the case would be one of literal infringement). And it defeats the requirement of *precise* claims that furnish clear public notice of the boundaries of patent monopolies.

1. Both of these requirements are found in Section 112, which governs the "specification" that makes up the bulk of a patent application. That provision first requires the applicant to provide a sufficiently detailed description of the invention to enable others to understand and reproduce it. 35 U.S.C. § 112 (paragraph 1). *See* J.A. 13-35 (patent at issue here). It then requires, in a separate paragraph, that the patent applicant conclude its specification "with one or more *claims* particularly pointing out and *distinctly* claiming the subject matter which the applicant regards *as his invention.*" 35 U.S.C. § 112 (paragraph 2) (emphasis added); *see* J.A. 36-38 ("We claim," followed by 17 claims). This requirement, whose violation is explicitly made a ground for invalidity of the patent (35 U.S.C. § 282(3)), demands " '*precision and definiteness* of claim language' ": "the claims must clearly set forth the area over which the applicant seeks exclusive rights." 2 D. Chisum, *Patents* § 8.03[2], at 8-24, 8-21 (1995) (quoting *In re Borkowski*, 422 F.2d 904, 909 (C.C.P.A. 1970)).

The provision's demand for precision is apparent in the "distinctly claiming" requirement. And the monopoly-defining character of the claim follows not only from the requirement of precision—why insist on precision of limits if the limits may be exceeded in litigation?—but also from the interaction of the claiming requirement with other statutory provisions. Section 112 (paragraph 2) by its terms states that the claims in the application set forth what the patentee is alleging to be his or her "invention." Under Section 131, the PTO must examine "the application and *the alleged new invention,*" and, if patentability requirements are met, the PTO must "issue a patent *therefor.*" 35 U.S.C. § 131 (emphasis added). The patent claims, written by the patentee (originally and through amendments, 35 U.S.C. §§ 131-132), thus define what the patent is issued for. Indeed, the claims become "part of such patent." 35 U.S.C. § 154(a)(4). *See also* PTO, *Manual of Patent Examining Procedure* § 608.01(k) (6th ed. 1995) (the claim "is the definition of that for which protection is granted"); *id.* § 806.04(e) ("Claims are definitions of inventions.").

2. Section 112 (paragraph 2) was a slight rewording of the requirement of a separate "claim" that was first stated definitively in the Patent Act of 1870, ch. 230, § 26, 16 Stat. 198, 203, after a less distinct reference to what the patentee "claims" appeared in the Patent Act of 1836, ch. 357, § 6, 5 Stat. 117, 119. *See* Pet. App. 26a (quoting statutes). Before the late 1870s, and on occasions for some years afterward, the patent cases coming before this Court involved "claims" that were not required or understood to provide, and did not in fact provide, a precise delineation of the invention: as in the key decision from which *Graver* traced the doctrine of equivalents, *Winans v. Denmead*, 56 U.S. (15 How.) 330 (1854), the "claims" often were only brief and uninformative references to an invention "substantially as . . . described" elsewhere in the patent (*id.* at 342).[13] Under that norm

[13] Another key decision, *Machine Co. v. Murphy*, 97 U.S. (7 Otto) 120 (1878), also involved a patent issued before the 1870 Act (*see* Pet. App. 27a), and this Court, without even quoting the claim, described it in one cursory sentence. 97 U.S. at 122. For other examples of claims from the era, see, *e.g.*, *Goodyear Dental Vulcanite Co. v. Davis*, 102 U.S. (12 Otto) 222, 223 (1880) (claim: "The plate of hard rubber or vulcanite, or its equivalent, for holding artificial teeth, or teeth and gums, substantially as described."); *Silsby v. Foote*, 55 U.S. (14 How.) 218, 226 (1853) (claim: "I also claim the combination above described, by which the regulation of the heat of the stove, or other structure in which it may be used, is effected.").

of patent drafting, the claims could not logically or practically be treated as defining the protected invention; instead, the outer reaches of the patent monopoly had to be determined by the courts in litigation, and those boundaries were then attributed to the patentee as what he or she "is understood to intend to claim." *Id.* at 342; *see* Pet. App. 110a-16a (Nies, J., dissenting). But in the late 1870s, this Court insisted on a different role for patent claims, and then repeatedly made clear the dual meaning of the requirement for separate, distinct claims: they define the limits of patent monopolies and must be precise to afford clear public notice of those boundaries.[14]

In *Merrill v. Yeomans*, 94 U.S. (4 Otto) 568, 573 (1877), the Court explained:

> The growth of the patent system in the last quarter of a century in this country has reached a stage in its progress where the variety and magnitude of the interests involved require accuracy, precision, and care in the preparation of all the papers on which the patent is founded. . . . [Patent law principles] leave no excuse for ambiguous language or vague descriptions. The public should not be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights. The genius of the inventor, constantly making improvements in existing patents,—a process which gives to the patent system its greatest value,—should not be restrained by vague and indefinite descriptions of claims in existing patents from the salutary and necessary right of improving on that which has already been invented. It seems to us that nothing can be more

[14] *See* Woodward, *Definiteness and Particularity in Patent Claims*, 46 Mich. L. Rev. 755, 758-64 (1948); Hantman, *Doctrine of Equivalents*, 70 J. Pat. & Trademark Off. Soc'y 511, 522 (1988); Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. Pat. Off. Soc'y 134, 377, 457 (1938). As the Federal Circuit observed, the 1870 Act is often identified as the "advent of peripheral claiming" (Pet. App. 27a), with the claim understood to define the outer periphery of the patent monopoly, in contrast to the earlier system of "central claiming," with the claim understood to point only to the core of the protected area. *See* Pet. App. 114a-15a (Nies, J., dissenting).

> just and fair, both to the patentee and to the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent.

In *Keystone Bridge Co.* v. *Phoenix Iron Co.*, 95 U.S. (5 Otto) 274, 278-79 (1877), the Court explained that "the courts cannot alter or enlarge" patent claims and that, even in the 1836 Act, the objective was to "relieve[] the courts from the duty of ascertaining the exact invention of the patentee."

> This duty is now cast upon the Patent Office. There his claim is, or is supposed to be, examined, scrutinized, limited, and made to conform to what he is entitled to. If the office refuses to allow him all that he asks, he has an appeal. But the courts have no right to enlarge a patent beyond the scope of its claim as allowed by the Patent Office, or the appellate tribunal to which contested applications are referred. When the terms of a claim in a patent are clear and distinct (as they always should be), the patentee, in a suit brought upon the patent, is bound by it. *Merrill v. Yeomans*, 94 U.S. 568. He can claim nothing beyond it. . . . As patents are procured *ex parte*, the public is not bound by them, but the patentees are. And the latter cannot show that their invention is broader than the terms of their claim; or, if broader, they must be held to have surrendered the surplus to the public.

The Court said in *Burns v. Meyers*, 100 U.S. (10 Otto) 671, 672 (1880), that courts must be "careful not to enlarge, by construction, the claim which the Patent Office has admitted, and which the patentee has acquiesced in, beyond the fair interpretation of its terms." In *Mahn v. Harwood*, 112 U.S. 354, 361 (1884), the Court explained:

> The public is notified and informed by the most solemn act on the part of the patentee, that his claim to invention is for such and such an element or combination and for nothing more. Of course,

> what is not claimed is public property. The presumption is, and such is generally the fact, that what is not claimed was not invented by the patentee, but was known and used before he made his invention. But, whether so or not, his own act has made it public property if it was not so before. The patent itself, as soon as it is issued, is the evidence of this. The public has the undoubted right to use and it is to be presumed does use what is not specifically claimed in the patent.

In *White v. Dunbar*, 119 U.S. 47, 52 (1886), the Court explained that the statute's "very purpose" in requiring a claim was to "make the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms." *See also McClain v. Ortmayer*, 141 U.S. 419, 423-24 (1891):

> While the patentee may have been unfortunate in the language he has chosen to express his actual invention, and may have been entitled to a broader claim, we are not at liberty, without running counter to the entire current of authority in this court, to construe such claims to include more than their language fairly imports. Nothing is better settled in the law of patents than that the patentee may claim the whole or only a part of his invention, and that if he only describe and claim a part, he is presumed to have abandoned the residue to the public.

In *Cimiotti Unhairing Co. v. American Fur Ref. Co.*, 198 U.S. 399, 410 (1905), the Court again declared that "the inventor is at liberty to choose his own form of expression" and that courts "may not add to or detract from the claim." *See also Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 419 (1908): "[T]he claims measure the invention. They may be explained and illustrated by the description. They cannot be enlarged by it." In 1917, the Court recited the "rules long established" (*Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 510 (1917) (quoting *Keystone*)):

> The scope of every patent is limited to the invention described in the claims contained in it, read in the light of the specification. These so mark where the progress claimed by the patent begins and where it ends that they have been aptly likened to the description in a deed, which sets the bounds to the grant which it contains. It is to the claims of every patent, therefore, that we must turn when we are seeking to determine what the invention is, the exclusive use of which is given to the inventor by the grant provided for by the statute,—'He can claim nothing beyond them.'

See also Mineral Separation, Ltd. v. Butte & Superior Mining Co., 250 U.S. 336, 347 (1919) (quoting *White v. Dunbar, supra*).

In the years leading up to the 1952 Patent Act, after one ambiguous ruling in 1929 (*Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30; *see* note 30, *infra*), the Court often restated these principles. In *Permutit Co. v. Graver Corp.*, 284 U.S. 52, 60 (1931) (footnote omitted), the Court explained that the patentee not only must describe the invention to enable others to make it after expiration of the patent but must, during the life of the patent, "inform the public . . . of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not." In *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938) (footnotes omitted), the Court invalidated a patent claim for being insufficiently precise, relying on the above-quoted passages from *Continental Bag* and *Permutit* and adding:

> Patents, whether basic or for improvements, must comply accurately and precisely with the statutory requirement as to claims of invention or discovery. The limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others, and the assurance that the subject of the patent will be dedicated ultimately to the public. The statute seeks to guard against unreasonable advantages to the patentee and disad-

vantages to others arising from uncertainty as to their rights.

See Milcor Steel Co. v. George A. Fuller Co., 316 U.S. 143, 145-46 (1942) (citing predecessor of Section 112 (paragraph 2)) ("claims . . . afford the measure of the grant to the patentee"). In *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942), the Court reiterated:

> The statutory requirement of particularity and distinctness in claims is met only when they clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise. A zone of uncertainty which enterprise and experimentation may enter only at the risk of infring[ing] claims would discourage invention only a little less than unequivocal foreclosure of the field.

In *Universal Oil Prods. Co. v. Globe Oil & Refining Co.*, 322 U.S. 471, 484 (1944), the Court said that one element of the "*quid pro quo*" for the patent monopoly is "precision of disclosure," which is needed "to warn the industry concerned of the precise scope of the monopoly asserted." And in the initial decision in the *Graver* case, *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 336 U.S. 271, 277 (1949), the Court noted: "We have frequently held that it is the claim which measures the grant to the patentee."

3. The Federal Circuit's doctrine of equivalents—imposing strict liability for non-literal infringement—by definition expands the legally protected monopoly beyond the patent claim (properly construed) and undermines the longstanding statutory commitment to clear public notice of the scope of each patent monopoly. As Judge Learned Hand explained long ago, such a doctrine "violates in theory the underlying and necessary principle that the disclosure is open to the public save as the claim forbids, and that it is the claim and that alone which measures the monopoly." *Claude Neon Lights, Inc. v. E. Machlett & Son*, 36 F.2d 574, 575 (2d Cir. 1929), *cert. denied*, 281

U.S. 741 (1930). The United States explained this evident point in 1970: "The judicially-created doctrine of equivalents runs counter to the statutory requirement that the subject of a patent be precisely defined in the patent claims." Brief for United States as *Amicus Curiae*, in *Standard Indus., Inc. v. Tigrett Indus., Inc.*, No. 445, October Term 1969, at 10-11. The Federal Circuit, in an earlier decision, articulated the point as well. *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 805 F.2d 1558, 1572 (Fed. Cir. 1986) (doctrine "by its nature is inimical to the basic precept of patent law that the claims are the measure of the grant" and impairs the public's ability "to know the precise legal limits of patent protection without recourse to judicial ruling"). Simply, such a doctrine,

> if applied broadly, can eviscerate both the claiming system and the goal of providing notice to the public of the scope of the patent. The doctrine achieves these results by enlarging, in an unpredictable way, the scope of the patent beyond the boundaries claimed by the applicant . . . .

Adelman & Francione, *The Doctrine of Equivalents in Patent Law: Questions that* Pennwalt *Did Not Answer*, 137 U. Pa. L. Rev. 673, 680 (1989); *see* 4 D. Chisum, *Patents*, § 18.04[1][a][i], at 18-74 to 18-90.

This fundamental inconsistency cannot be denied or explained away by simply declaring that inventions that are no more than "equivalents" are actually " 'the same.' " Pet. App. 30a (quoting *Graver*, 339 U.S. at 608). It is mere wordplay to say that a product or process falling outside the protection of "literal" infringement—precisely because it is *different* from the invention as set forth in the patent claim—is nevertheless the same as that invention. In so saying, the court is, by definition and in fact, doing nothing other than enlarging the claim beyond its meaning as properly construed. And it is defeating the fundamental purpose of modern patent claims: to give the public clear, reliable notice of the reach of the legal mo-

nopoly.[16] This case is illustrative: the patent claim's clearly stated pH requirement of "approximately 6.0 to 9.0" was expanded (concededly beyond its meaning) to cover a pH of 5 (which is ten times as acidic) or even less. *See* Pet. App. 172a (injunction against any pH less than 9.01).

The uncertainty over the scope of patent monopolies created by the Federal Circuit's doctrine of equivalents not only fosters expensive, time-consuming, and risky litigation, but hampers subsequent inventors and competitors by curtailing their ability to know "which features may be safely used or manufactured without a license and which may not." *Permutit*, 284 U.S. at 60 (footnote omitted). Such a doctrine disables businesses from reliably knowing, and patent counsel from reliably discerning, what areas are foreclosed to them by patents.[16] Even

[16] This inconsistency is highlighted by the jury's role in application of the Federal Circuit's doctrine of equivalents. If this Court were to hold in *Markman v. Westview Instruments, Inc.*, No. 95-26 (argued Jan. 8, 1996), that judges rather than juries are to construe patent claims, so as to provide a uniform definition of the scope of the legally protected monopoly, it would seem at cross-purposes to say that juries may nonetheless expand the claims by resort to a broad notion of "equivalents."

[16] *See, e.g.*, Malone, *The Death of Invention*, Best of Business Quarterly 17, 21 (Fall 1991) (statement of Silicon Valley patent counsel Roger Borovoy, recommending that courts "should simply abolish" the doctrine of equivalents, explaining: "It would save untold billions. My attitude is if you don't want that kind of infringement then, dammit, claim it right in the first place. Then if you wanted to find out if you were infringing on somebody else's patent, you could pay $1.50 and know exactly. Right now, you go to an attorney and pay $25,000 for an infringement opinion only to have him say, 'Well, on the one hand . . . but on the other hand. . . .' The doctrine may have seemed like a good idea at the beginning, but it's expanded way beyond what's reasonable."); Larson, *Balancing the Competing Policies Underlying the Doctrine of Equivalents in Patent Law*, 21 Am. Intell. Prop. L. Ass'n Q.J. 1, 10-11 (1993) ("In the experience of the author, if an infringement issue requires consideration of the doctrine of equivalents, practicing lawyers find it extremely difficult, if not impossible, to predict whether a particular product will be found infringing by a court. The Federal Circuit has acknowledged that one who attempts to design around a patent rarely knows whether he is infringing

aside from the long line of authority quoted above, this Court has, in other contexts, stressed the requirement of the patent statute that "the metes and bounds" of a patent monopoly be "capable of precise delineation," without which "[i]t may engross a vast, unknown, and perhaps unknowable area." *Brenner v. Manson*, 383 U.S. 519, 534 (1966).[17]

Since 1952, Congress has confirmed its recognition that innovation may be harmed by uncertainty regarding patent rights and has taken steps to reduce it. In 1980, it enacted Public Law No. 96-517, 94 Stat. 3015, to create a new mechanism for administrative reexamination of patents (to redetermine their validity). 35 U.S.C. §§ 301-307. The relevant Committee Report explained that providing an efficient alternative to "expensive and lengthy infringement litigation . . . will promote industrial innovation by assuring the kind of certainty about patent validity which is a necessary ingredient of sound investment decisions." H.R. Rep. 96-1307, Part I, 96th Cong., 2d Sess. 4 (1980). Congress gave effect to the same policy judgment when, in 1982, it created the Federal Circuit and gave it exclusive jurisdiction over patent appeals. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25. The evident reason was to "reduce costs to litigants" and "the judicial system," and to

until a district court has decided the issue. Since a violation of patent rights carries serious consequences, the existing state of the law creates uncertainty for manufacturers who compete in product lines protected by patents.") (footnotes omitted); Adelman & Francione, 137 U. Pa. L. Rev. at 682-83 ("The doctrine of equivalents is the primary (although not the exclusive) cause of the current uncertainty surrounding the scope of patent claims. This uncertainty has serious consequences."; detailing adverse effects); J. Schlicher, *Patent Law: Legal and Economic Principles* §§ 7.02, at 7-3 to 7-12 (1988).

[17] The Court noted the cost of uncertainty as to patent rights in *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313, 338, 342-43 (1971), and in *Cardinal Chem. Co. v. Morton Int'l, Inc.*, 113 S. Ct. 1967, 1977-78 & n.24 (1993). *See also Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) (noting the "definiteness which Congress called for in the 1952 Act").

accord "the businesses that rely on the patent system . . . more stable and predictable law . . . [to guide] investment in research and development[;] . . . it is important to those who must make these investment decisions that we decrease unnecessary uncertainties in the patent system." Sen. Rep. 97-275, 97th Cong., 1st Sess. 5-6 (1981) (internal quotation marks omitted); *see* H.R. Rep. 97-312, 97th Cong., 1st Sess. 21-23 (1981).

The uncertain broadening of patent rights authorized by the Federal Circuit's doctrine of equivalents is particularly out of keeping with the principles of the Patent Act because its effect is to enlarge the scope of a legal monopoly—which has long been treated as "anomalous" in our legal system. *Blonder-Tongue*, 402 U.S. at 342-43; *see Cardinal Chem. Co.*, 113 S. Ct. at 1977. Thus, this Court has repeatedly held: "Since patents are privileges restrictive of a free economy, the rights which Congress has attached to them must be strictly construed so as not to derogate from the general law beyond the necessary requirements of the patent statute." *United States v. Masonite Corp.*, 316 U.S. 265, 280 (1942); *see Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 230 (1964) ("the prerequisites to obtaining a patent are strictly observed, and when the patent has issued the limitations on its exercise are equally strictly enforced"); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989) ("free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception"); *Deepsouth Packing Co.*, 406 U.S. at 530-31; *Hartford-Empire Co. v. United States*, 323 U.S. 386, 452-53 (1945) (Rutledge, J., dissenting). Unpredictable expansion of patent monopolies runs afoul of that background principle.

4. There is no evidence that Congress in 1952 intended any departure from the bedrock principles that had come to define the critical role of patent claims. In the Committee Report comment on Section 112 (paragraph 2), Congress characterized the claim as defining the invention. H.R. Rep. 1923, 82d Cong., 2d Sess. 19 (1952) ("The clause relating to the claim is made a separate

paragraph to emphasize the distinction between the description and the *claim or definition* . . . ." (emphasis added)).[18] And there is no apparent indication in the legislative history that Congress endorsed any doctrine of equivalents as an infringement standard.

There is, in fact, textual indication to the contrary—in Section 112 itself. In the last paragraph of Section 112 (now paragraph 6), Congress responded to this Court's restriction of patentees' ability to use "functional" language in claims, *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946), by specifically providing for a form of flexible claiming that incorporates a notion of "equivalents." *See Patent Law Codification and Revision*, Hearings Before Subcomm. No. 3 of the House Judiciary Comm., 82d Cong., 1st Sess. 45 (1951) ("*1951 Hearing*"). The provision allows the patentee to

[18] In hearings before the congressional subcommittee responsible for drafting the Patent Act of 1952, now-Judge Giles Rich—one of the drafters of the 1952 Act (*see* H.R. Rep. 1923, *supra*, at 4) and one of the dissenting judges in this case—explained (without contradiction) what had come to be recognized as the basic role of the patent claim: "In the prosecution of a patent application, the fight with the Patent Office always is how you are going to word the claims, because these claims define the monopoly, the exclusive right which the patent grants." *Contributory Infringement*, Hearings Before Subcomm. No. 4 of the House Judiciary Comm., 81st Cong., 1st Sess. 3-4 (1949). *See also Contributory Infringement in Patents: Definition of Invention*, Hearings Before the Subcomm. on Patents, Trademarks, and Copyrights of the House Judiciary Comm., 80th Cong., 2d Sess. 7 (1948): "Every patent, as you know, has one or more claims. In fact, each claim of a patent which has more than one claim can be considered as a separate patent. Those claims define the protection which the patent actually grants to the patentee. The specifications and the drawings describe what the inventor has done and what invention he has actually made. But notwithstanding what is described there, he is protected only in what is claimed. Now, the claims have been likened to a fence put around a field within which the patentee has protection and outside of which he has no protection. If accidentally, intentionally, or for any other reason this fence is put around a smaller area of territory than he is entitled to, he gets only what is within the fence. [¶] The Supreme Court has likened claims to a description of real property in terms of metes and bounds."

express an element in a claim for a combination as a means for performing a specified function (*e.g.*, fastening) and declares that such a claim is properly construed to cover a particular device for doing so described in the specification (*e.g.*, a snap) "and equivalents thereof." 35 U.S.C. § 112 (paragraph 6).[19]

The normal inference as to the proper statutory interpretation is hard to avoid: inclusion of the flexible principle in this one section makes it inappropriate to read such a principle into other sections of the statute. *See Custis v. United States*, 114 S. Ct. 1732, 1736 (1994); *Gozlon-Peretz v. United States*, 498 U.S. 395, 404 (1991); *Russello v. United States*, 464 U.S. 16, 23 (1983). Any generally applicable doctrine of equivalents achieves for every patent the result—a flexible, "equivalents"-based definition of the scope of the protected monopoly—that Congress quite deliberately limited to the particular types of patents (combination patents) addressed by Section 112, paragraph 6. *See 1951 Hearing* at 45.[20] Indeed, the sixth paragraph's negative implication for any more general doctrine of equivalents is reinforced by the legislative history. In what apparently are the only two statements in the legislative history about the doctrine of equivalents—by the chairman of the House subcommittee responsible for the

[19] Even in that provision, Congress provided only that the claim may be *construed* to include equivalents *to the specification*, not expanded to equivalents of the claim. But the provision does allow the boundaries of the particular patent monopolies covered by it to be defined partly by a specific reference plus "equivalents."

[20] For elements within combinations, flexibility may be thought to pose less of a threat to the general policy of clear and publicly known boundaries of patent monopolies. The overall *combination* of elements must itself be definite, and a combination already defines a narrowed field of monopoly: "no one is an infringer of a combination claim unless he uses *all* the elements thereof." *Cimiotti Unhairing Co.*, 198 U.S. at 410 (emphasis added); *see Deepsouth*, 406 U.S. at 528. Allowing "equivalents" flexibility for an element within that narrowed field—and doing so as matter of *construction* of claims, not expansion—is less threatening of the statute's policy of clearly marked outer boundaries for legally protected monopolies: less area is walled off.

preparation of the 1952 Patent Act and by the official presenting the views of the Department of Justice—the doctrine was specifically tied to this provision for combination claims.[21]

B. The "Insubstantial Differences" Standard Is Inconsistent With the Congressionally Prescribed Methods, Focusing on the Expert Patent and Trademark Office, for Defining and Correcting the Scope of Patent Monopolies

The Federal Circuit's doctrine of equivalents, in addition to depriving claims of their designated function of precisely defining the limits of patent monopolies, undermines a second fundamental element of the legal structure erected by Congress. It allows judges and juries in infringement litigation to enlarge the scope of a patent monopoly beyond what was approved by the PTO, thus overriding the primacy of the PTO's role in examining and approving the scope of the legally granted monopoly. And

[21] In June 1951, the representative of the Department of Justice, whose assistance in drafting the bill was expresaly recognized by the key House subcommittee (H.R. Rep. 1923, *supra*, at 3), testified to the House subcommittee in opposition to the new means-plus-function provision for combination claims. He stated that the provision "introduces into the statute for the first time the controversial doctrine of equivalents without defining its scope." *1951 Hearing* at 95. In January 1952, months before the committee report of the patent code revision, Rep. Joseph R. Bryson, chairman of the subcommittee that was responsible for the bill, gave a speech to the Philadelphia Patent Law Association, reprinted in the Congressional Record, in which he said of this new means-plus-function paragraph of Section 112: "I should like to say a word on the provision in the bill for functional claiming. The subcommittee realizes that this will permit combination claims to be expressed functionally at the point of novelty. This provision in reality will give statutory sanction to combination claiming as it was understood before the Halliburton decision. All the elements of a combination now will be able to be claimed in terms of what they do as well as in terms of what they are. This has been strongly recommended by the patent bar and appears to us logically necessary if combination claiming is to be recognized as acceptable. This provision also gives recognition to the existence of the doctrine of equivalents." 98 Cong. Rec. A415, A416 (Jan. 28, 1952).

it provides for a corrective broadening of patent claims in disregard of the PTO-focused procedures, and substantive standards, specifically established by Congress for any such enlargement.

1. Unlike the Copyright Act, 17 U.S.C. §§ 101-702, the federal patent statute has since 1836 placed an expert administrative agency—the PTO (until 1975, the Patent Office)—at the center of the system for both granting and defining intellectual-property rights. To obtain patent rights, an individual must not only meet substantive requirements (35 U.S.C. §§ 100-105) but must file an application complying with detailed requirements, including Section 112's requirement for precise claims (35 U.S.C. §§ 111-122). The application is then subjected to agency examination to determine whether "the application is entitled to a patent under the law" (35 U.S.C. § 131), and adverse decisions are subject to review. 35 U.S.C. §§ 131-146.[22] Ultimately, if all requirements are met, the PTO issues the patent. 35 U.S.C. §§ 151-157. Each claim of the resulting patent is, in any subsequent infringement litigation, given a presumption of validity. 35 U.S.C. § 282.

The Federal Circuit's doctrine of equivalents allows an end run around the PTO. "A broadly interpreted doctrine of equivalents erodes any administrative determination of patentability by expanding the scope of a claim beyond the administrative process to cover something that the PTO had not reviewed." Adelman & Francione, 137 U. Pa. L. Rev. at 705. This Court in *Keystone Bridge*, 95 U.S. at 278, explained that the very purpose of the 1836 Act's creation of the Patent Office was to shift "the duty of ascertaining the exact invention" out of the courts and into the Patent Office, where the patentee's "claim is, or is supposed to be, examined, scrutinized, limited, and

[22] As a practical matter, "the granting of a patent comes after a long and frequently difficult process of negotiation with the PTO. The PTO examines the putative invention and searches the prior art in order to determine whether the application for a patent meets the rigorous standards of patentability." Adelman & Francione, 137 U. Pa. L. Rev. at 704 (footnote omitted).

made to conform to what he is entitled to." The policy was not simply to lift a judicial burden but to demand preclearance by experts.[23] Yet the doctrine of equivalents, by definition, gives to the patentee a legal monopoly "beyond the scope of its claim as allowed by the Patent Office." *Ibid.*

Indeed, the doctrine gives a presumption of validity (35 U.S.C. § 282) to coverage that the PTO has never reviewed and approved. And under the Federal Circuit's rule protecting matters actually surrendered at the behest of the PTO, the doctrine even grants protection for what the PTO has *dis*allowed. A patentee's judicially sanctioned expansion of the protected area, in disregard of the limits set by the PTO, "is akin to a landowner moving his fence outward to expand his territory without consulting the land office (his grantor) as to his right to the added territory." Jessup, *The Doctrine of Equivalents*, 54 J. Pat. Off. Soc'y 248, 250 (1972).

2. The doctrine of equivalents not only authorizes disregard of the PTO's designated role in issuing the patent, but also bypass of the role Congress assigned to it for the specific purpose of correcting initial errors of undue narrowness. A patentee invoking the doctrine of equivalents is asserting nothing other than that the actual valid patent claims are somewhat too narrow to cover the "real" invention, as viewed by the patentee in hindsight. Yet Congress created a carefully crafted mechanism to address such an assertion: the reissue process. 35 U.S.C. §§ 251-252. The Federal Circuit's doctrine of equivalents (indeed, any such doctrine) allows "corrective" enlargement of patent claims without compliance with the conditions and procedures set forth by Congress for reissue.

[23] *See* Patent Act of 1836, § 7, 5 Stat. 120; Sen. Rep. Accompanying S. 239, 24th Cong., 1st Sess. (1836), reprinted in 6 D. Chisum, *Patents*, App. 12, at 12-4 to 12-5. Expertise in the examination process, which was the aim from the outset (*id.* at 12-6), has long been specified by statute. Patent Act of 1870, § 10, 16 Stat. 200; 35 U.S.C. §§ 7(a), 8. *See also* 35 U.S.C. § 31; 37 C.F.R. § 10.7 (expertise required for registration as attorney to prosecute patent applications).

Section 251 provides for *the PTO* to reissue a patent if, through "error," the patentee has claimed "less than he had a right to claim in the patent." 35 U.S.C. § 251. It is up to the PTO to ensure, however, that "[n]o new matter shall be introduced into the application for reissue." *Ibid.* And the statute sets a flat two-year limit on reissued patents "enlarging the scope of the claims of the original patent." *Ibid.* Beyond that, Section 252 carefully protects certain "intervening rights" of persons other than the patentee—persons who already had activities in progress that would run afoul of the reissued, but not the original, patent. 35 U.S.C. § 252.[24] As long ago as 1877, this Court pointed to this reissue mechanism as the proper means for correction: "If the patentees have not claimed the whole of their invention, and the omission has been the result of inadvertence, they should have sought to correct the error by a surrender of their patent and an application for a reissue." *Keystone Bridge,* 95 U.S. at 278.

Expansion of claim scope by the doctrine of equivalents runs roughshod over the congressional requirements for reissue, as Judge Nies noted in dissent below. *See* note 12, *supra.* It bypasses the PTO; it allows (in the Federal Circuit's view) addition of "new matter" not disclosed in the patent; it requires (in the Federal Circuit's view) no "error" on the part of the patentee; it need not come within two years; and it leaves unprotected the intervening rights of those, like Warner-Jenkinson, who had made at least "substantial preparation" for using a process brought under protection by a reissue patent (35 U.S.C. § 252).[25] In this respect, "the doctrine of equivalents is

[24] The reissue provisions of the 1952 Act provided expressly for broadening reissues, which had previously been recognized judicially (*Topliff v. Topliff*, 145 U.S. 156 (1892)), and laid down a bright-line two-year limit on broadening reissues, replacing the more flexible two-year timeliness rule that this Court had developed (*see Miller v. Brass Co.*, 104 U.S. 350 (1882); *Ives v. Sargent*, 119 U.S. 652 (1887). *See generally* 4 D. Chisum, *Patents* § 15.02; H.R. Rep. 1923, *supra*, at 26.

[25] In this case, for example, nothing in Hilton Davis's patent disclosed working processes using a pH below 6; and Warner-Jenkinson was in commercial operation by the time it learned of Hilton Davis's patent. *See* page 5, *supra.*

nothing more than the circumvention of a statutory procedure . . . [and] of explicitly stated statutory protection for members of the public who may have relied on the original claims." Adelman & Francione, 137 U. Pa. L. Rev. at 716.

II. EVEN IF *GRAVER* IS CONTROLLING, ANY NON-LITERAL INFRINGEMENT SHOULD BE NARROWLY LIMITED TO MATTERS THAT THE PATENTEE ASSERTED (RATHER THAN SURRENDERED) IN THE APPLICATION PROCESS AND DISCLOSED IN THE PATENT AS EQUIVALENT TO THE PATENT'S VALID CLAIMS

The Federal Circuit relied pervasively on this Court's 1950 decision in *Graver.* Even if that decision were a controlling precedent under the 1952 Patent Act, however, it would not support the Federal Circuit's broad holding that non-literal infringement is proved whenever lack of substantial differences is shown. *Graver* did not establish, and did not have to rely on, a broad doctrine of equivalents. And the overriding need to reduce, if not eliminate, the inconsistencies with the statutory scheme demands that *Graver* be read no more broadly than its facts and reasoning require. Such an approach suggests a very narrow doctrine that readily resolves this case.

A. *Graver* Does Not Support the Federal Circuit's Broad Standard

In *Graver,* the respondent Linde Air Products owned a patent on an electric welding process and certain fluxes to be used in the process. 339 U.S. at 606. The patentee included certain broad claims describing the flux that referred to any "metallic silicate," and the specification identified several that worked equivalently, including magnesium *and* manganese. *Linde Air Products Co. v. Graver Tank & Mfg. Co.*, 86 F. Supp. 191, 197, 198, 199 (N.D. Ind. 1947), *rev'd in part,* 167 F.2d 531 (7th Cir. 1948),

rev'd in part, 336 U.S. 271 (1949) and 339 U.S. 605 (1950). This Court, like the district court (*id.* at 198-99), held those claims to be invalidly overbroad because they covered some substances that did not work. *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 336 U.S. 271, 276-77 (1949). The patentee also included claims, however, that referred more specifically to "alkaline earth metal silicates," a class that includes magnesium but does not include manganese. 339 U.S. at 610; *see* 167 F.2d at 538 n.2. Those claims were sufficiently narrow to be valid. 336 U.S. at 275.

The infringement issue set for rehearing in this Court, and decided in the 1950 *Graver* opinion, arose because petitioners Graver Tank and Lincoln Electric used a flux that included manganese in place of magnesium. The manganese was outside the valid claims for "alkaline earth metal silicates," but it was claimed elsewhere in the patent (in the invalidly overbroad claims) and disclosed in the patent itself as equivalent. 339 U.S. at 610; 86 F. Supp. at 199. This Court held that the petitioners had infringed the valid claims. 339 U.S. at 610-12.

The Court quoted the "function-way-result" standard for determining equivalence that had been articulated in the Nineteenth Century. 339 U.S. at 608; *see Machine Co.*, 97 U.S. at 125 ("one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same result"). But the Court in *Graver*, unlike the Federal Circuit in this case, nowhere held that satisfaction of that standard, or lack of "substantial differences," was by itself a *sufficient* condition for a finding of infringement. Rather, the Court described the doctrine as having evolved in response to the problem of the "unscrupulous copyist" and "pirate" (339 U.S. at 607); said that the doctrine is available "when the proper circumstances for its application arise" (*id.* at 608); and declared that the doctrine "is not the prisoner of a formula" (*id.* at 609). The Court also said that an "important factor" was whether skilled persons "would have known of the interchangeability" of ingredients (*id.* at 609), and the Court twice observed (*id.* at 611, 612) that, as far as the record revealed, the defendants had developed their product by "imitation" rather than "independent research" (*id.* at 612). Quite simply, *Graver* need not be read as holding any more than that insubstantial differences are a *necessary* condition for non-literal infringement, and it found such infringement only where important additional circumstances were present.

The critical facts that made the fairness concern so compelling to the Court in *Graver* are apparent. The defendants, engaging in "imitation rather than experimentation or invention" (339 U.S. at 612), adopted a product that the patentee had disclosed in its patent, and indeed had tried to claim, as equivalent to its valid claims, failing in the effort at coverage only because the defendants' product was included in separate claims that were subsequently held to be invalid for being excessively broad. *See* 4 D. Chisum, *Patents* § 18.02[2], at 18-14 (the patentee's equities in *Graver* rested on the fact that "the infringer's product used a species actually disclosed in the patentee's specification, a species that was literally covered by generic claims that were held invalid only because of undue breadth"); J. Schlicher, *supra*, § 7.04[17], at 7-79 (*Graver* approves non-literal infringement "when an inventor discloses the precise product made by the accused infringer, specifically claims that product, and those claims are declared invalid for reasons having nothing to do with whether the inventor was entitled to protection of a scope that included that product").[26] Those facts and the Court's opinion in *Graver* suggest two principles that, taken together and treated as necessary requirements for any non-literal infringement over and above a finding of "insubstantial" differences, can diminish the impairment of

[26] The patentee in *Graver*, which obtained approval for (later invalidated) broad claims, was subject to Patent Office rules, now defunct, that prohibited a patentee with such a "genus" claim from separately claiming more than three "species." *See* Pet. App. 137a n.28 (Nies, J., dissenting); 2 D. Chisum, *Patents* § 18.02[2], at 18-15.

statutory principles worked by any doctrine of equivalents. And these principles readily resolve this case.

B. Non-Literal Infringement Should Not Extend to Any Matter Surrendered During the Patent Application Process, as Shown by the Patent File

Graver involved a situation where the patentee, far from giving up a matter in the process of prosecuting its patent application, affirmatively claimed this matter—failing in the end to gain literal protection for it only because the claim that included it turned out to be invalid as overbroad. The Court in *Graver* thus had no occasion to disturb, and did not disturb, a well-established limit on any non-literal infringement, variously known as "prosecution history estoppel" and "file wrapper estoppel." This Court stated the principle in *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 136 (1942): "Whatever may be the appropriate scope and application of the doctrine of equivalents, where a claim is allowed without a restrictive amendment, it has long been settled that recourse may not be had to that doctrine to recapture claims which the patentee has surrendered by amendment." [27] In *Exhibit Supply*, an original application containing a more general and encompassing definition in the claim (any conductor "carried by the table") was narrowed by amendment in the prosecution of the patent application (to refer only to a conductor "embedded in the table"). The Court held: "By the amendment [the patentee] recognized and emphasized the difference between the two phrases and proclaimed his abandonment of all that is embraced in that difference. The difference which he thus disclaimed *must* be regarded as material, and since the amendment operates as a disclaimer of that

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[27] What was surrendered by amendment in the course of prosecuting the patent application is readily discovered because the PTO conducts all of its business with the public in writing and bases its decision on the written record (37 C.F.R. § 1.2) and the file is available to the public (37 C.F.R. § 1.11(a); *see id.* § 1.19 (fees)).

difference it must be strictly construed against him." 315 U.S. at 136-37.

The principle has long been applied and stated. In *Graham v. John Deere Co.*, 383 U.S. at 33-34, the Court stated the same principle as a bar to broadening a claim by interpretation and noted the lineage of the principle:

> claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent. *Powers-Kennedy Contracting Corp. v. Concrete Mixing & Conveying Co.*, 282 U.S. 175, 185-186 (1930); *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U.S. 211, 220-221 (1940). [¶]Here, the patentee obtained his patent only by accepting the limitations imposed by the Examiner. The claims were carefully drafted to reflect these limitations and [the assignee of the patent] is not now free to assert a broader view of [the patentee's] invention.

Judge Learned Hand wrote in *Strause Gas Iron Co. v. William M. Crane Co.*, 235 Fed. 126, 127-28 (2d Cir. 1916), that it was "the well-settled rule" that a patentee was bound by the limitation it wrote into its patent claim in the application process in order to satisfy the patent examiner, even if "it was not necessary" to have the limitation in order to have a valid claim. *See also Hubbell v. United States*, 179 U.S. 77, 80, 83-84 (1900) (the claim "cannot be so construed as to cover either what was rejected by the Patent Office *or* disclosed by prior devices" (emphasis added)); Pet. App. 130a-31a, 151a (Nies, J., dissenting) (citing additional decisions).

The deliberate surrender of a matter in the patent prosecution—here, pH ranges below "approximately 6.0"—should preclude its protection under any standard of non-literal infringement without regard to a later judicial inquiry into the "reason" for the surrender. Pet. App. 24a. This Court's precedents contain no such narrowing of this principle. And basic considerations of patent policy point strongly against introducing a "reason" inquiry into the

principle: it would undermine the public's ability to rely, if not on the patent *claim*, then on what is disclosed on the face of the patent file; and patentees are fully able to protect themselves in the application process, challenging limitations that are imposed without justification.

On the public's side of the equation, demanding a judicial inquiry into the reason for a limitation clearly adopted during the application process seriously increases uncertainty as to the scope of the patent monopoly. A determination as to what is within the protected monopoly cannot confidently be made if it depends not only on what the claims say, and on what limitations the patent file reveals were clearly added during the prosecution of the patent, but also on what a judge or jury in a subsequent infringement action will conclude about the "reason" for the limitations. Indeed, in this case, patent counsel reviewing the patent file—which reveals in the clearest terms that Hilton Davis inserted the pH range of 6.0 to 9.0 by amendment at the examiner's behest—concluded that Hilton Davis could not assert non-literal infringement to cover processes outside that range. J.A. 147. Yet the Federal Circuit, in a cursory reexamination, concluded that there was no sufficient "reason" for the limitation (Pet. App. 24a), despite the (unmentioned) "tremendous foaming problems" described by Hilton Davis's inventor (J.A. 111) and the fact that the patent's validity rested on "the particular combination" of process conditions, including pHs (Pet. App. 156a). The jury instruction confirms the unpredictability that accompanies the Federal Circuit's standard: the jury was directed to examine "not only what was surrendered, but also the reason for such a surrender" and told that explicit surrender

> may have a limiting effect within a spectrum ranging from great to small to zero. Determination of the effect on the doctrine of equivalents from actions taken before the PTO requires consideration of the nature of such actions, the reasons therefore, the prior art distinguished, and the examiner's objections thereby overcome.

J.A. 60. A "reasons" standard utterly undermines the patent policy of clear public notice.

As for patentees, it makes sense to hold them to their deliberate surrenders—or, what amounts to the same thing, to presume conclusively that they do not surrender matters without reason. After all, patentees have every incentive to write claims as broadly as possible. *See Brenner*, 383 U.S. at 534 (referring to "the highly developed art of drafting patent claims so that they . . . broaden[] the scope of the claim as widely as possible"); R. Merges, *Patent Law and Policy* 11 (1992) ("The overall goal when drafting claims is to make them as broad as the Patent Office will allow."). Moreover, patentees, with their scientific expertise, are fully able to engage the expert examiners in any necessary discussion to explore whether matters do in fact have to be omitted from the patent claims. *See* J.A. 96-98, 106-08.[28] Patentees also have recourse within the Patent and Trademark Office, and before the judiciary, if an examiner's restriction is too narrow. *See* 35 U.S.C. §§ 132, 134, 141, 145. And, when particular matters are the subject of an examiner's initial rejection and subsequent amendment, patentees should not be heard to deny that those matters were prominently in their attention. In that circumstance at least, there can be no justification for expanding the patent monopoly beyond the terms of the resulting claim to reach what was consciously foregone by the patentee.

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[28] Given that Hilton Davis's patent specification did not disclose that its process would actually *work* for any pH below 6, rejection by the PTO would have been the proper response if Hilton Davis had written claims to assert coverage for solutions with pH below 6: a patent may not cover more than what the patent shows actually to work. *See* 35 U.S.C. § 112 (paragraph 1) (enablement); *Consolidated Elec. Light Co. v. McKeesport Light Co.*, 159 U.S. 465 (1895); *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854); 37 C.F.R. § 1.75(d)(1) (claim must "conform to the invention as set forth in the remainder of the specification"); 37 C.F.R. § 1.118(a) (prohibiting amendment of disclosure that introduces "new matter," "involving a departure from or an addition to the original disclosure").

C. Non-Literal Infringement Should Extend at Most Only to Matters Disclosed in the Patent as Equivalent to the Patent's Valid Claims

Any non-literal infringement standard should also be subject to a second important limitation: a requirement that the patent itself (outside the valid claims) disclose the equivalence later asserted in the infringement suit. This limit, starting with a focus on equivalence *known* at the time of the patent and going one step further to require actual disclosure by the patentee, is consistent with *Graver* and serves basic patent policies. The obligation to diminish the degree of incompatibility between any non-literal infringement standard and the statutory structure supports adoption of this requirement.

1. A focus on what was known to be equivalent at the time of the patent dates back to the Nineteenth Century era in which the doctrine of equivalents originated. The Court held in 1872 that, *if* the change introduced by the defendant's product or process was not known to be equivalent to the patent claim at the time the patent issued, there can be no infringement. *See Gould v. Rees*, 82 U.S. 187, 194 (1872) ("an alteration in a patented combination which merely substitutes another old ingredient for one of the ingredients in the patented combination is an infringement of the patent, if the substitute performs the same function *and* was well known at the date of the patent as a proper substitute for the omitted ingredient, but the rule is otherwise if the ingredient substituted was a new one, or performs a substantially different function, *or* was not known at the date of the plaintiff's patent as a proper substitute") (emphasis added). *See Gill v. Wells*, 89 U.S. (22 Wall.) 1, 28-30 (1874); Pet. App. 126a-30a (Nies, J., dissenting). *Graver* itself stressed this factor. 339 U.S. at 609 ("An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent [*i.e.*, valid patent claims] with one that was.").

Basic patent policy supports this requirement. What is not immediately and widely known (in the relevant art) to

be equivalent to the claimed invention falls outside the statute's fundamental limit restricting protection to the advances in knowledge made by the patentee, as demanded by the novelty and nonobviousness requirements, 35 U.S.C. §§ 101-103. It is the defendant, not the plaintiff patentee, who has made an advance in knowledge when an equivalent is discovered that is not covered by, or known to be equivalent to, the patent claim. Giving exclusive patent rights to the plaintiff in this circumstance would reward the wrong person and would, indeed, disserve the patent system's goal by depriving defendants of the fruits of what *they* have discovered (an equivalent).

2. Beyond a contemporaneous-knowledge requirement, a demand that the patent itself have disclosed the equivalence finds support in the facts and in much of the language in *Graver*. The Court pointed out the doctrine's targeting of "the unscrupulous copyist" and the "pirate" (339 U.S. at 607), terms that presume a defendant's having taken its idea from the plaintiff's patent. The Court also stressed repeatedly that "the record contains no evidence of any kind to show that [the defendants' product] was developed as the result of independent research or experiments" (*id.* at 611), including in the final paragraph summarizing why it was "difficult to conceive of a case more appropriate for application of the doctrine of equivalents." *Id.* at 612 ("imitation rather than experimentation or invention"). This point had likewise been emphasized in the brief discussion of infringement in the first *Graver* opinion. 336 U.S. at 276 ("The petitioners introduced no evidence to show that their accused [product] was derived either from the prior art, by independent experiment or from any source other than the teachings *of the patent in suit*." (emphasis added)). And, as the dissent in *Graver* observed, the trial court had rested its finding of infringement on the ground that the plaintiff's patent itself showed the equivalence of what the defendants then produced. 339 U.S. at 613. The core fairness concern animating *Graver*, the most compelling explanation of its departure from decades of insistence on claim precision and PTO

primacy (as argued in the dissent), seems to turn on this fact. *See* Pet. App. 142a (Nies, J., dissenting).

This sharp limitation on any non-literal infringement thus comports with *Graver* when read with an eye toward reducing the scope of any impairment of the statutory policies of claim precision and agency primacy in patenting. Requiring actual disclosure of the equivalence in the patent also gives effect to both the basic policy of the patent laws and the "equitable" basis of the doctrine of equivalents (Pet. App. 15a-16a). If the defendant's product or process is not disclosed in the patent, that product or process fails outside the basic bargain of the patent statute: monopoly in exchange for disclosure. *See Bonito Boats, Inc.*, 489 U.S. at 150, 159 ("the bargain held out by the federal patent system of disclosure in exchange for exclusive use"); 35 U.S.C. § 112 (paragraph 1) (enablement).

So, too, a standard requiring no more than contemporaneous knowledge of equivalence often would engender precisely the sort of costly litigation disfavored under the statute. A requirement of actual disclosure in the patent would sharply reduce proof problems on the issue. And, today, if there is a known equivalence that the patentee, with his or her available expertise, has failed to disclose in the patent despite the ability to do so (*compare* note 26, *supra*), there is hardly anything equitable about giving the patentee exclusive control over the defendant's right to use the undisclosed idea. In light of the strong statutory policy of clarity of patent boundaries, no broader standard of non-literal infringement should be allowed.[29]

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[29] A standard of non-literal infringement that looked to whether defendants actually or presumptively took their idea from the patent would directly reflect the "piracy" and "equity" interests expressed in *Graver*. *See* Pet. App. 78a-79a (Lourie, J., dissenting). To the extent that such a standard protected defendants who developed their product or process prior to the plaintiff's patent, it would find support in an analogy to the statute's protection, in the reissue process, of the "intervening rights" of defendants whose work preceded a broadening reissue patent. 35 U.S.C. § 252; Pet. App. 104a (Nies, J., dissenting). The strict disclosure requirement suggested in the text avoids any non-uniformity of patent rights and potential difficulties of proof that might accompany various defendant-specific standards.

3. These requirements readily resolve this case. Warner-Jenkinson's use of a pH of 5 in place of Hilton Davis's required pH of 6 was not simply the "interchang[ing]" of an "ingredient" (*Graver*, 339 U.S. at 609)—much less one that was well known to be equivalent to Hilton Davis's prescribed process. Whereas in *Graver* the substitution of manganese (outside the valid claim) for magnesium (within the valid claim) was a well-known equivalence, here the "tremendous foaming problems" encountered by Hilton Davis at lower pH levels (J.A. 111) indicate that it was *not* well known that its process would function equivalently at lower levels. And whereas the patent in *Graver* disclosed the manganese-magnesium equivalence, Hilton Davis's patent at no point discloses that its process would, at a pH of 5, be equivalent to the process it identified throughout its patent—in claims and specifications—as operating at pH levels of 6 or above. *See* Pet. App. 147a (Nies, J., dissenting). Indeed, Warner-Jenkinson, hardly a "pirate," developed its process by independent experimentation, not by imitation.

III. THE 1952 PATENT ACT IS BEST READ AS NOT INCORPORATING ANY DOCTRINE OF EQUIVALENTS CREATING LIABILITY FOR NON-LITERAL INFRINGEMENT

This case can be resolved without reaching the fundamental question whether the 1952 Patent Act recognizes any standard for non-literal infringement. And the incompatibility between the statute and any such standard would be substantially reduced, though not eliminated, by the narrow standard set forth above. But the logical implication of that incompatability points to abandonment of the doctrine altogether. In the end, neither the precedential force of *Graver* nor the policy appeal of a flexible infringement standard for isolated cases pro-

vides a sufficient reason for reading the 1952 Act silently to incorporate any doctrine of equivalents.

A. Any Non-Literal Infringement Is Inconsistent With the 1952 Act

Any standard of non-literal infringement is inconsistent with the whole structure of the Patent Act, with its requirement of precisely drawn claims defining the outer boundaries of the protected monopoly, after approval (initially or on reissue) by the PTO. Practically, the degree of inconsistency may be lessened; but by definition, allowing non-literal infringement expands claims, bypasses PTO processes and reissue limits, and heightens uncertainty about the scope of patent monopolies. And this evident contradiction is by no means unavoidably present in the statute. There is nothing whatever in the 1952 Act, or in any legislative history, endorsing *Graver* or otherwise indicating that the standard for infringement protects a patent monopoly defined with reference to "equivalents," beyond the properly construed meaning of the patent claims. To the contrary, the limited provision for certain combination claims, 35 U.S.C. § 112 (paragraph 6), and its legislative history strongly indicate the absence of any general doctrine of equivalents.

B. Silent Incorporation of *Graver* Should Not Be Attributed to Congress

The *legal* argument that the 1952 Patent Act permits any non-literal infringement, then, rests entirely on the pre-1952 precedent of *Graver* (and its predecessors). More particularly, the argument relies wholly on a legal presumption—the presumption that a law designed substantially (even though not entirely) to codify and restate prior law generally is understood to incorporate then-existing judicial interpretations. *See, e.g., Davis v. United States*, 495 U.S. 472, 482 (1990); *Pierce v. Underwood*, 487 U.S. 552, 566-68 (1988). But that presumption does not sensibly apply where it would produce a fundamental and otherwise-unsupported incoherence in the resulting statute. Without evidence that Congress

actually intended a deep internal inconsistency, it makes little sense to hold that the principles that Congress clearly *has* enacted must give way to principles merely attributed to Congress, as a legal matter, by a background rule of construction for resolving interpretive issues.

Relatedly, this Court has made clear that the legal presumption of congressional ratification of pre-enactment case law does not apply where the judicial interpretations in the area do not present a "uniform" and "settled construction." *Fogerty v. Fantasy, Inc.*, 114 S. Ct. 1023, 1032-33 (1994). In the present case, *Graver*'s affirmation of a doctrine of equivalents stands in unavoidable and well-recognized tension with the long line of this Court's decisions declaring that the boundaries of patent monopolies are determined by the precise patent claims approved by the expert agency. *See* pages 16-20, *supra*. The situation facing the 1952 Congress, then, was at best one of two mutually inconsistent lines of authority on the problem. And, in fact, the lines of authority, though opposite, were hardly equal.

By 1952 it was well recognized that any doctrine of equivalents was anomalous in the setting of the commitment of patent law, since at least the turn of the Century, to a regime of precise definition of patent monopolies by the claims approved by the Patent Office. In 1936, a commentator wrote: "The Doctrine of Equivalents Has Been Nullified. . . . [W]ith the development of the American concept of the peripheral claim, and more specifically, of the combination type of claim, the doctrine of equivalents has become completely lost, so far as being of any benefit to the patentee is concerned." Dienner, *Claims of Patents*, 18 J. Pat. Off. Soc'y 389, 403 (1936). In 1942, this Court put off deciding, rather than rejecting, the contention that the doctrine should be discarded as "incompatible with the statutory requirements for the grant of a patent and with the doctrine that the patent claims measure the patented invention." *Exhibit Supply*, 315 U.S. at 131-32. In 1950, between this Court's first and second opinions in *Graver*, a commentator explained how ill-fitting the doctrine had become

in modern patent law: "the doctrine of equivalents in its [claim-broadening] application is logically inconsistent with the function of the claim as the measure of the grant to the patentee, finds only meager support in modern Supreme Court precedents, is opposed to the policy of informing the public of the exact limits of the granted monopoly, and runs counter to the Court's tendency to limit patent monopolies as being inconsistent with the policy of the anti-trust laws." Tilton, *The Doctrine of Equivalents in Patent Cases*, 32 J. Pat. Off. Soc'y 861, 869 (1950). After *Graver* was decided, but before the 1952 Act was enacted, a commentator recounted specifically the dearth of modern precedent for the doctrine: "No case other than the *Sanitary Refrigerator Co. v. Winters* case [in 1929] has been found since the year 1892, in which the Supreme Court has used the Doctrine of Equivalents as a tool for expanding the language of a claim." Swanson, *A Discussion of the Application of the Doctrine of Equivalents in the Graver v. Linde Case*, 33 J. Pat. Off. Soc'y 19, 29-30 (1951); *see* Tilton, 32 J. Pat. Off. Soc'y at 867.[30] The situation was summed up by one commentator in 1948:

> In this country, the claims are regarded as definitions of the invention, rather than mere guides to its scope. There are a few decisions which treat the question of infringement merely as whether or not the defendant's accused devices or activities accomplish substantially the same result by substantially the same means as shown in the patent as a whole, irrespective of the terms of the claims. But since the entire logic of the development of the patent system has been to limit the patent owner more and more to those terms, the Bar has long been chary of attaching much weight

[30] The 1929 decision in *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, was an ambiguous precedent for such expansion. The Court's opinion nowhere says that it is doing anything but construing the claim. And the defendant's product, in fact, appears to have come within one of the patent claims. *See* Hantman, 70 J. Pat. & Trademark Off. Soc'y at 539 (defendant's latch mechanism falls under the general language of Claim 7 of the patent at issue).

> to the possibility of any particular patent having force beyond the terms of its claims.

Woodward, 46 Mich. L. Rev. at 757. *See* Pet. App. 124a (Nies, J., dissenting).

As we have noted, taking the claims as a mere starting point was natural, and indeed inevitable, in the era of "central claiming" that gave rise to the doctrine, when claims were broadly drafted and included phrases such as "substantially as described" that called for an inquiry into "equivalents" merely as a matter of construction. But with the often-repeated insistence on, and ingrained acceptance of, a *defining* character for patent claims, the doctrine of equivalents as a tool for expanding patent monopolies became anomalous. By the late 1940s it could easily be noted that it "is hard to reconcile" the doctrine of equivalents with the "undoubted authority" of the principle that definite claims set the outer reaches of patent monopolies. Woodward, 46 Mich. L. Rev. at 763. In these circumstances, the usual presumption of incorporation of pre-existing case law carries little weight as applied to *Graver*.[31]

[31] The so-called "reverse doctrine of equivalents"—which sometimes refuses to find infringement despite literal coverage by patent claims with comparatively broad wording (*Boyden Power-Brake Co. v. Westinghouse*, 170 U.S. 537 (1898))—raises overlapping but somewhat different considerations in any statutory analysis. In particular, narrowing rather than expanding protection preserves claims (drafted in the *ex parte* process before the PTO) as the *outer* limits of the protected monopoly; works in line with, rather than against, the basic principle of confining the scope of exceptions to the general rule of free competition; and attempts to confine the patent monopoly to what the patentee has actually invented, as later understood. The question how these or other considerations (such as the reexamination process, 35 U.S.C. §§ 301-307) affect the validity of such a limitation on literal infringement—which is not often used successfully (Pet. App. 140a n.30 (Nies, J., dissenting); *Ethyl Molded Prods. Co. v. Betts Packaging Inc.*, 9 U.S.P.Q.2d 1001, 1026 (E.D. Ky. 1988) (doctrine never applied by Federal Circuit))—is not presented in this case, which involves the *expansion* of patent rights through allowing non-literal infringement.

C. No Overriding and Authoritative Policy Supports Non-Literal Infringement

It can hardly be denied that, as a pure policy matter, the notion of a flexible infringement standard responds to a real concern. Without a doubt, predictable imperfections of drafting mean that an insistence on confining patent protection to the patent claims (as construed) could produce results in some cases that, in isolation, might seem to afford too little protection. But for this policy observation even to begin to be transformed into a legal argument, the point would have to be so compelling—not only by itself, but weighed against competing policy concerns—that the policy balance would so decisively tilt in favor of a flexible infringement standard that an intent to adopt such a standard could be attributed to Congress in evident contradiction of the choices reflected in the statutory structure. We see no basis for such a determination.

On the patentee side of the balance, the basic facts are that patentees have drafting power in their own hands and are entitled in any infringement litigation to a fair construction of their claims, taking into account other claims, the specification, the prosecution history, prior art, and any needed additional evidence about how the relevant scientific community understands the terms in context. *See, e.g., Graham*, 383 U.S. at 33; *Winans v. New York & E.R.R.*, 62 U.S. (21 How.) 88, 100-01 (1859). As indicated in this case, the patent claim *is* permitted to have some measure of flexibility built into it ("approximately" 6 to 9 on the pH scale), though the measure of flexibility is subject to the expert judgment of the PTO. Combination claims are permitted an added measure of flexibility under Section 112 (paragraph 6). And reissue is available to correct mistakes in proper circumstances. These mechanisms of self-protection temper, if they do not eliminate, any pragmatic (and unmeasurable) concerns about "underprotection" through literal infringement.

There is, moreover, a weighty and familiar other side to the balance. "Overprotection" of patents has real, well-established costs, as does uncertainty created by safety

valves of unpredictable scope. Patent law seeks to encourage invention through economic reward, but "more protection is better" is not the policy of the Patent Act. Thus, the Act does not bar all economic substitutes so as to preserve the monopoly reward of the inventor, even during the limited (now 20-year) period of a patent (35 U.S.C. §154(a)(2)); to the contrary, as the Federal Circuit observed (Pet. App. 13a), patent policy encourages "designing around," *i.e.*, the finding of market substitutes for the patented product or process. The evident reasons are that expansive patent protection can impose concrete economic costs on consumers, *i.e.*, monopoly's higher prices and reduced output. It can also inhibit the *next* inventor from beneficial innovation in the patentee's field. And uncertainty as to legal entitlements plainly has its systemic costs.[22]

The policy balance among these countervailing considerations might, presumably, be struck reasonably in different ways. The proper legal question, however, is what balance Congress has struck. Given that there is no established "correct" balance, and that the attempt to solve one "problem" by introducing a flexible non-literal infringement standard itself creates other problems, there is simply nothing determinate about a policy analysis of the issue. In these circumstances, no implication about congressional intent can be drawn from an independent policy analysis, and there is no basis for disregarding the plain import of the statute.

Nor, finally, can permanent adoption of a doctrine of equivalents be justified by claims of reliance on lower court precedent. Even aside from the fact that any such reliance is intrinsically time-limited by the terms of past

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[22] *See, e.g.*, R. Cooter & T. Ulen, *Law and Economics* 100, 135-36 (1988); F. Scherer & D. Ross, *Industrial Market Structure and Economic Performance* 626 (3d ed. 1990); F. Machlup, *An Economic Review of the Patent System*, Study of the Subcomm. on Patents, Trademarks, and Copyrights of the Sen. Judiciary Comm., 85th Cong., 2d Sess. 12, 63-64 (1958); Gilbert & Shapiro, *Optimal Patent Length and Breadth*, 21 Rand J. Econ. 106, 107, 108-09, 112 & n.3 (1990).

patents, the basis for such a claim is too weak. The doctrine has long presented a "most contentious issue." R. Merges, *Patent Law and Policy* 657 (1992). Over 25 years ago, the United States urged the doctrine's elimination, or drastic curtailment, as "irreconcilable with fundamental principles of congressional patent policy." Brief for United States as *Amicus Curiae*, *supra*, at 16. In 1972, a commentator, in urging the doctrine's elimination because its mere threat "creates a harmful and unnecessary uncertainty in the patent system," explained that the doctrine was only "infrequently applied." Jessup, 54 J. Pat. Off. Soc'y at 251. More than 17 years ago, in *Coleco Industries, Inc. v. U.S. Int'l Trade Comm'n*, 573 F.2d 1247 (C.C.P.A. 1978), a divided Court of Customs and Patent Appeals confirmed the uncertain continuing scope of any doctrine of equivalents: three of the five judges, though finding no infringement, indicated a broad view of the doctrine's availability (*id.* at 1254-58), while the two concurring judges (Rich, J., and Markey, C.J.) indicated, to the contrary, that the doctrine of equivalents "is an exception to the rule that patentees are limited to what they claim and is not applied in every case" and should not be applied in the absence of a specific basis, such as the "great advance" of the plaintiff's patent or the defendant's having "appropriated the essence of the invention." *Id.* at 1258. By the time the Federal Circuit was created, patent counsel were on notice that expansion of patent claims through the doctrine was not predictable or reliable.

Within the Federal Circuit, which has had to grant *en banc* review of the doctrine twice in a decade (*see Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934-35 (Fed. Cir. 1987), *cert. denied*, 485 U.S. 961, 1009 (1988)), there has long been "considerable debate and uncertainty" about the doctrine. Glitzenstein, *A Normative and Positive Analysis of the Scope of the Doctrine of Equivalents*, 7 Harv. J. L. & Tech. 281, 301 (1994). Though "once thought to be a narrow doctrine" (Adelman & Francione, 137 U. Pa. L. Rev. at 699), it has been the subject of expansion, contraction, refinement, and questioning since the Federal Circuit was created.[88] By the late 1980s, the doctrine was widely noted to be in a state of considerable disarray. *See, e.g., ibid.*; Hantman, 70 J. Pat. & Trademark Off. Soc'y at 554 ("great deal of confusion"); Smith, *The Federal Circuit's Modern Doctrine of Equivalents in Patent Infringement*, 29 Santa Clara L. Rev. 901, 902 (1989) (no "coherent view"); Harris, *Three Ambiguities of the Doctrine of Equivalents in the Federal Circuit*, 69 J. Pat. & Trademark Off. Soc'y 91, 96 (1987) ("inherent uncertainty").

In these circumstances, any claim of significant reliance on an expansive doctrine of equivalents is entitled to little weight. Indeed, for individual patentees, an assertion of reliance on non-literal infringement amounts to an avowal that, despite patentees' complete ability during the drafting process to define the full scope of what they believed themselves to have invented, they were less than comprehensive or thorough in the process, counting instead on the future use of the doctrine of equivalents to expand their patents beyond the literal meaning of the claim. The equities of such an assertion hardly warrant maintenance of penumbral infringement protection in fundamental contradiction to the rest of the patent statute.

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[88] *See, e.g.*, 6 D. Chisum, *Patents* § 18.04, at 18-73 to 18-150 (tracing meanderings); *Hughes Aircraft Co. v. United States*, 717 F.2d 1351 (Fed. Cir. 1983); *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 805 F.2d 1558 (Fed. Cir. 1986); *Perkin-Elmer Corp. v. Westinghouse Electric Corp.*, 822 F.2d 1528 (Fed. Cir. 1987); *Pennwalt, supra; Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422 (Fed. Cir. 1989); *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534 (Fed. Cir. 1991); *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320 (Fed. Cir. 1991); *Charles Greiner & Co. Inc. v. Mari-Med Mfg. Inc.*, 962 F.2d 1031, 1036 (Fed. Cir. 1992) (doctrine is the exception, not the rule; "careful confinement of the doctrine of equivalents to its proper equitable role, promotes certainty and clarity in determining the scope of patent rights").

CONCLUSION

The judgment of the court of appeals should be reversed.

Respectfully submitted,

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APPENDIX

STATUTORY APPENDIX

35 U.S.C. § 112, entitled **"Specification,"** provides in pertinent part:

> [¶ 1] The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> [¶ 2] The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
>
> * * * *
>
> [¶ 6] An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 131, entitled **"Examination of application,"** provides:

> The Commissioner shall cause an examination to be made of the application and the alleged new invention; and if on such examination it appears that the applicant is entitled to a patent under the law, the Commissioner shall issue a patent therefor.

35 U.S.C. § 154, entitled **"Contents and term of patent,"** provides in pertinent part:

> (a)(1) CONTENTS.—Every patent shall contain a short title to the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or sell-

ing the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.

* * * *

(4) SPECIFICATION AND DRAWING.—A copy of the specification and drawing shall be annexed to the patent and be a part of such patent.

35 U.S.C. § 251, entitled **"Reissue of defective patents,"** provides in pertinent part:

[¶ 1] Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

* * * *

[¶ 4] No reissue patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent.

35 U.S.C. § 271, entitled **"Infringement of patent,"** provides in pertinent part:

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

35 U.S.C. § 281, entitled **"Remedy for infringement of patent,"** provides:

A patentee shall have remedy by civil action for infringement of his patent.

35 U.S.C. § 282, entitled **"Presumption of validity; defenses,"** provides in pertinent part:

A patent shall be presumed valid. Each claim of a patent * * * shall be presumed valid independently of the validity of other claims * * *. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

* * * *

35 U.S.C. § 283, entitled **"Injunction,"** provides:

The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

35 U.S.C. § 284, entitled **"Damages,"** provides:

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interests and costs fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.